



First record of the Hauxwell's Thrush, *Turdus hauxwelli* Lawrence, 1869 (Aves: Turdidae) from Mato Grosso do Sul, Brazil, and geographic range extension

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Abstract

We report the first record of the Hauxwell's Thrush, *Turdus hauxwelli* Lawrence, 1869 (Aves: Turdidae) in the state of Mato Grosso do Sul, Brazil. During an ornithological inventory conducted in Serra de Maracajú, municipality of Corguinho, we mist-netted and collected an individual of the species. The specimen was prepared as study skin and is held in the ornithological collection of the Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro. This record is located 472 km south of the closest visual/song record and 616 km southeast of the closest museum specimen, being the southernmost occurrence of this thrush.

Key words

Passeriformes; Cerrado; Serra de Maracajú; semi-arid Neotropics; western Brazil.

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Introduction

The Hauxwell's Thrush, *Turdus hauxwelli* Lawrence, 1869, is a monotypic passerine of the Turdidae family found in upper Amazonia in southeastern Colombia (Ori-noco region), eastern Ecuador and Peru, northern Bolivia (Reyes, next to the Bení River) and western Brazil (east of the Purus River) (Hellmayr 1934, Deignan et al. 1964, Ridgely and Tudor 2009, Collar 2016). Although the taxonomy of this species is historically controversial,

with some authors considering it to be conspecific with the Pale-vented (*T. obsoletus* Lawrence, 1862) and Cocoa Thrushes (*T. fumigatus* Lichtenstein, 1823) (Hellmayr 1934, Deignan et al. 1964, Snow 1985), recent studies consider it as a separate but sister species of *T. fumigatus* based on plumage, molecular and ecological data (Voelker et al. 2007, Ridgely and Tudor 2009, O'Neill et al. 2011, Dickinson and Christidis 2014, Collar 2016). *Turdus hauxwelli* has also been mistaken as the Várzea Thrush (*Turdus sanchezorum* O'Neill et al. 2011), a species

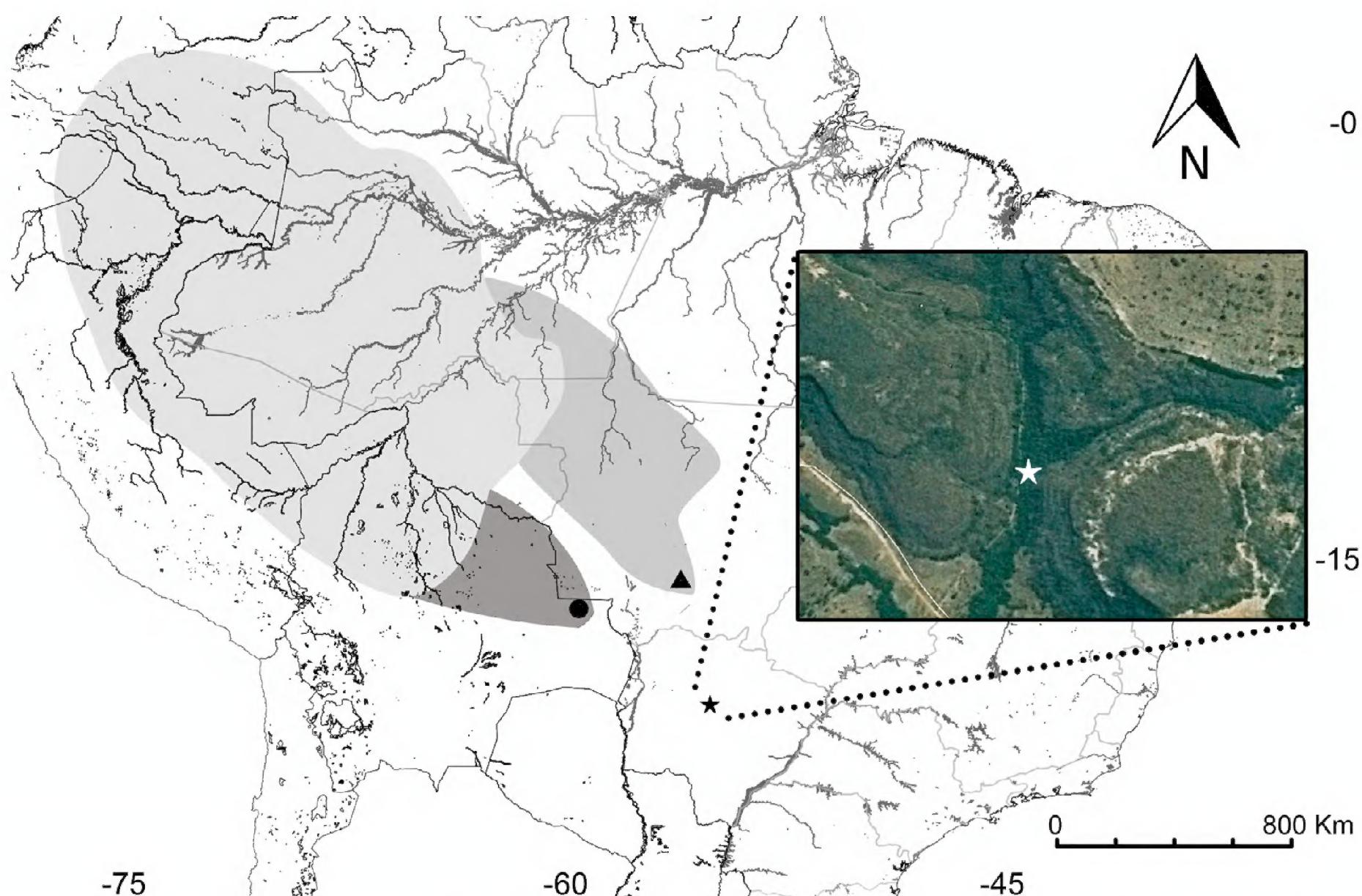


Figure 1. Satellite image of the collection site and map of the currently known distribution of Hauxwell's Thrush *T. hauxwelli* based on Collar (2016) and Ridgely and Tudor (2009) (light gray); visual/ vocal records obtained in WikiAves portal (medium gray); and specimen records obtained in Vertnet.org portal (dark gray). Closest specimen record (circle) (AMNH 833476, Prov. Velasco, Santa Cruz, Bolivia,); Closest visual/ vocal record (triangle) (photos: WA1178388, WA1178389; song recordings: WA1156136, WA185399, WA1179314; Santo Antonio do Leverger, Mato Grosso); and our record (star) (MN 51070, RPPN Vale do Bugio, Corguinho, Mato Grosso do Sul). Closest photo records obtained in WikiAves are apparently the same as IBC 1043143 and IBC 1043141 in IBC (the Internet Bird Collection, <http://hbw.com/ibc>), which have more specific locality: Serra de São Vicente. Vouchers used to define visual and vocal records polygon: WA 1167247, WA 1943836, WA 1440175, WA 1178389, WA 478843, WA 1776469, WA 1722731 and WA 25211. Vouchers used to define collection specimens records polygon: FMNH 335351, AMNH 833576, FMNH 335352.

only recently described. Although historically mistaken, these 2 taxa have well marked morphological, vocal and ecological differences (O'Neill et al. 2011). Furthermore, molecular data support a distant relationship between them and place *T. sanchezorum* in a different clade with the Spectacled Thrush (*T. nudigenis* Lafresnaye, 1848) (O'Neill et al. 2011) and that they are sister species to *T. nudigenis* (Cerqueira et al. 2016).

Its natural habitat comprises the humid lowland forests, including areas of terra firme, but mostly várzea and other stands near water up to 800 m, but usually below 400 m (Ridgely and Tudor 2009, Collar 2016). Both sexes have similar plumage being rufous-brown above, slightly stronger on rump, with dark-streaked whitish throat, whitish belly and vent, the latter with brown tips, pale-orange underwing-coverts and brownish-gray bill and tarsus. Although its conservation status is classified as Least Concern, it is locally uncommon due its shy and presumably sedentary habits (Ridgely and Tudor 2009, Collar 2016). Records in Brazil are scarce.

Here we report the first record of *T. hauxwelli* in Mato Grosso do Sul state, Brazil, based on a single specimen collected in the Serra de Maracajú, municipality of Corguinho.

Methods

During an ornithological inventory from 22 to 27 September 2015 in the rural area of the municipality of Corguinho, Mato Grosso do Sul, Brazil, at the Reserva Particular do Patrimônio Natural (RPPN), Vale do Bugio (19°56'56" S, 055°04'13" W, 365 m) (Fig. 1), we mist-netted an individual of *T. hauxwelli*. The local vegetation is a fragment of Cerradão (semi-deciduous forest), a phytophysiognomy of Cerrado, in this case with various influences of Amazonian, Atlantic and Chaco forests (Damasceno et al. 2000, Ramos and Sartori 2013). The study site is located in the central portion of the Serra de Maracajú, a geological formation made of sedimentary and volcanic rocks. This plateau extends over the Paraná river basin from northern to central Mato Grosso do Sul state and forms a natural divide between the Pantanal and Cerrado biomes (Boggiani et al. 1998).

The individual was captured on 25 September 2015 at approximately 06:00 h using a mist-net placed close to a small creek. It was immediately measured using a measuring tape (total length and wingspan) and weighed using a Pesola® scale. All information regarding molting, coloration of soft parts, and parasites were taken in



Figure 2. Ventral (**A, C**) and lateral (**B, D**) views of Hauxwell's Thrush, *T. hauxwelli* (stars), Cocoa Thrush, *T. fumigatus* (triangles, MN 45602, Laranjal do Jari, Amapá), and Várzea Thrush *T. sanchezorum* (squares, MZUSP 61917, Lago Beruri, Amazonas). Collected specimen of *T. hauxwelli* (MN 51070, RPPN Vale do Bugio, Corguinho, Mato Grosso do Sul) (**A, B**), other *T. hauxwelli* (**C, D**, MZUSP 3639, Rio Juruá, Amazonas). Note the white mid-belly and crissum, typical diagnostic character of *T. hauxwelli* when compared to *T. fumigatus*, and the feathered orbital ring, less contrasting streaks on the throat, and dark-brown (not olive) when compared to *T. sanchezorum*.

the field. The specimen was collected (SISBIO permit number 10613, ICMBIO, Instituto Chico Mendes de Conservação e Biodiversidade), euthanized according to Brazilian laws, prepared as study skin and deposited in the Ornithological Collection of Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil, under the accession number MN 51070. Gonads were examined in the laboratory to determine the specimen's sex. The carcass was fixed in 4% formalin, subsequently preserved in 70% ethanol and given the same accession number as the skin. A tissue sample was taken from the breast and stored in alcohol 100% (accession number MNT 4286).

Historical distribution records of *T. hauxwelli* were obtained from careful research of the literature and specimens deposited in scientific collections. Data on the specimens held in North American collections were obtained from the Vertnet.org database (<http://vertnet.org/>) and data on specimens held at Museu Nacional, UFRJ (MN), Museu de Zoologia, Universidade de São Paulo (MZUSP) and Instituto Nacional de Pesquisas da Amazônia (INPA) were taken personally. Data regarding visual (photographs) and song records were found in WikiAves (WA) and Xeno-canto (XC) databases (wikiaves.com.br and xeno-canto.org).

Results

The bird was identified in the field by all authors using specialized literature (Ridgely and Tudor 2009) and was

furthered compared to the existent series of the genus *Turdus* held in MN, MZUSP, INPA, and photographs of some specimens held at Museu Paraense Emílio Goeldi (MPEG). Identity of the species was confirmed based on the following diagnostic features: dark brown bill, mostly warm brown plumage and white mid-belly and crissum (Fig. 2). *Turdus hauxwelli* is very similar to its closest related species, the Cocoa Thrush (*T. fumigatus* Lichtenstein, 1823), which is overall more rufescent and much more buff on belly and crissum (Ridgely and Tudor 2009, O'Neill et al. 2011) (Fig. 2). It has been historically reported that in areas of sympatry, such as the north bank of lower Rio Solimões and lower Rio Madeira, both species can present some intermediate plumage features that include the saturation of the rufescent color and amount of white on the crissum (Snow 1985, O'Neill et al. 2011). Our specimen, however, has all features (described above) attributed to a typical *T. hauxwelli*. The specimen (Fig. 2) also differs from specimens of *T. sanchezorum*, which have a distinct olive bill with yellow tomia (instead of dark brown), yellow-orange bare orbital ring (feathered in *T. hauxwelli*), more contrastingly dark throat streaks on a whiter background and grayish-brown tail (instead of rufous-brown) (O'Neill et al. 2011). Therefore, the individual collected is in full agreement with external morphology of other specimens of *T. hauxwelli* examined. Some of the specimens used to validate the identity of the species are given in Table 1.

The specimen is an adult male (testes 10 and 9 mm), 61 g, 230 mm of total length, 380 mm of wingspan,

Table 1. List of *Turdus* specimens examined to validate the identity of the specimen of *T. hauxwelli* collected. The list includes only the taxa historically mistaken with the species in question.

Catalog number	Taxa	Locality
MN 29047	<i>T. hauxwelli</i>	Estirão do Equador, Rio Javarí, Amazonas, Brazil
MN 33607	<i>T. hauxwelli</i>	Jacaré, Alto Xingu, Mato Grosso, Brazil
MZUSP 3639	<i>T. hauxwelli</i>	Rio Jurua, Amazonas, Brazil
MZUSP 16402	<i>T. hauxwelli</i>	Codajás, Rio Solimões, Amazonas, Brazil
MPEG 73523	<i>T. hauxwelli</i>	Manicoré, Democracia, margem leste do Rio Madeira, Amazonas, Brazil
INPA 641	<i>T. hauxwelli</i>	Parque Nacional do Jaú, Localidade do Monteiro, Amazonas, Brazil
MN 16256	<i>T. fumigatus</i>	Tury-Assú, Maranhão, Brazil
MN 16457	<i>T. fumigatus</i>	Lagoa Juparanã, Sant'Anna, Espírito Santo, Brazil
MN 16712	<i>T. fumigatus</i>	Cametá, Tocantins, Brazil
MN 24952	<i>T. fumigatus</i>	Igarapé Piquiá, Rio Guamá, Pará, Brazil
MN 44755	<i>T. fumigatus</i>	Almerim, Porto Sabão, Pará, Brazil
MN 45602	<i>T. fumigatus</i>	Laranjal do Jari, Chafariz, Amapá, Brazil
MZUSP 61917	<i>T. sanchezorum</i>	Lago Beruri, Amazonas, Brazil
MPEG 73567	<i>T. sanchezorum</i>	Manicoré, Colares, margem leste do Rio Madeira, Amazonas, Brazil

brown iris, total dark brown bill, dark gray tarsus, light gray foot palm, no brood patch, molt or parasites.

Discussion

Despite the efforts of some important historical naturalists such as Emmet R. Blake, Olivério Pinto, José Hidasi (Pinto 1932, Pinto 1940, Tubelis and Thomas 2003, Straube 2011, Nunes et al. 2013), and recent researchers, who catalogued 413 species of birds occurring at Serra de Maracajú (Nunes et al. 2013), this is the first record of *T. hauxwelli* for the state of Mato Grosso do Sul. Furthermore, this is the southernmost record that significantly extends the distribution limits of this species. This new record is approximately 616 km from the closest location where a specimen was collected (AMNH 833476, Velasco province, Santa Cruz department, Bolivia, 16°33'00" S, 059°39'00" W) and roughly 472 km from the closest visual/vocal record (photo records: WA1178388, WA1178389; vocal records: WA1156136, WA185399, WA1179314; Santo Antônio do Leverger, Mato Grosso, Brazil, 15°51'55.3" S, 056°04'54.7" W). Our record shows that this species is not restricted to humid and dense Amazonian forests (Snow 1985, Ridgely and Tudor 2009, Collar 2016) but rather shows that it can occupy drier environmental conditions, such as some Cerrado forests. On the other hand, because the area is influenced by other biomes, such as the Amazon and Chaco, this area might represent a more suitable habitat for this Amazonian bird species. Considering that *T. hauxwelli* is presumably sedentary (Collar 2016), it is likely that this individual represents a resident population at the region. Further searches may show if this species is present at nearby localities at a similar latitude and between the new locality and previously known occurrences.

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Authors' Contributions

NB, SPF, GT, CPA and LS collected the data, NB and SPF wrote the text, LS and SPF took the photographs and GT reviewed the text and prepared the figures and tables.

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